Holy Cross Catholic Primary School

 Science Curriculum Map 2022-23

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|  | **Autumn**  | **Spring**  | **Summer**  |
| Year 1  | **Seasonal Changes** During this unit children will learn how to**observe changes across the 4 seasons and observe and describe weather associated with the seasons and how day length varies.** **Animals including humans – About Animals** This is the second part of two units. This unit takes children through six lessons where they learn how to **identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.** They learn how to **identify and name a variety of common animals that are carnivores, herbivores and omnivores**. And finally, they learn how to**describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).** | **Animals including humans – About Me** In this unit, children will learn about **animals, including humans** is the first part of two units. This unit takes children through six lessons where they learn how to **identify, name, draw and label the basic parts of the human body** and saywhich**part of the body is associated with each sense.****Exploring Everyday Materials 1**This is the first part of two units. This unit takes children through six lessons where they learn how to **distinguish between an object and the material from which it is made.** They also learn how to **identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.** They **describe the simple physical properties of a variety of everyday materials**. And finally, they **learn how to compare and group together a variety of everyday materials on the basis of their simple physical properties.** | **Introduction to Plants** This unit on'**Plants’** takes children through six lessons where they learn how to **identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.** They also learn how to **identify and describe the basic structure of a variety of common flowering plants, including trees.** **Exploring Everyday Materials 2**This is the second part of two units. This unit takes children through six lessons where they learn how to **distinguish between an object and the material from which it is made.** They also learn how to **identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.** They **describe the simple physical properties of a variety of everyday materials.** And finally, they learn how to **compare and group together a variety of everyday materials on the basis of their simple physical properties.** |
| Year 2  | **Animals Including Humans – Growth**This unit takes children through six lessons where they learn how to **notice that animals, including humans, have offspring which grow into adults**. They **find out about and describe the basic needs of animals, including humans, for survival (water, food and air)** and finally they learn how to**describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene**.**Animals Including Humans – Life cycles**This unit takes children through six lessons where they are taught how to**notice that animals, including humans, have offspring which grow into adults.**   | **Uses of Everyday Materials** This unit takes children through six lessons where they learn how to: **identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses**. They also learn how to **find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.****Living Things and Their Habitats Around the World** This unit takes children through six lessons where they**: explore and compare the differences between things that are living, dead, and things that have never been alive**; they learn how to **identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other**. They learn how to **identify and name a variety of plants and animals in their habitats, including microhabitats** and finally they learn how to **describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.** | **Living Things and Their Habitats** This unit takes children through six lessons where they: explore and compare the differences between things that are living, dead, and things that have never been alive. They learn how to identify and name a variety of plants and animals in their habitats, including microhabitats; and describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **Plants** This unit takes children through six lessons where they learn how to: **observe and describe how seeds and bulbs grow into mature plants;**and**find out and describe how plants need water, light and suitable temperature to grow and stay healthy.**  |

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| Year 3  | **Rocks** This unit on takes children through six lessons where they learn how to **compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.** They learn how to **describe in simple terms how fossils are formed when things that have lived are trapped within rock** and finally they learn how to **recognise that soils are made from rocks and organic matter.**  **Light** This unit ‘Light’ takes children through six lessons where they learn how to:**recognise that they need light in order to see things and that dark is the absence of light; they notice that light is reflected from surfaces;**and**recognise that light from the sun can be dangerous and that there are ways to protect their eyes.**Children learn how to**recognise that shadows are formed when the light from a light source is blocked by an opaque object;**and**they find patterns in the way that the size of shadows change.** | **Plants - Life Cycles** This unit takes children through six lessons where they learn how to:identify and describe the functions of differentparts of flowering plants: roots, stem/trunk, leaves and flowers. They explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. They learn how to investigate the way in which water is transported within plants and finally they learn how to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.**Scientific Enquiry** This unit takes children through six lessons where they learn the scientific skills they will need to apply during each unit of learning during key stage 2.  | **Animals Including Humans** This unit takes children through six lessons where they learn how to: **identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.** They also learn how to **identify that humans and some other animals have skeletons and muscles for support, protection and movement.****Forces and Magnets** This unit takes children through six lessons where they learn how to: **compare how things move on different surfaces; notice that some forces need contact between 2 objects, but magnetic forces can act at a distance; and observe how magnets attract or repel each other and attract some materials and not others.**Children learn how to**compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials; describe magnets as having 2 poles**and they learn **how to predict whether 2 magnets will attract or repel each other, depending on which poles are facing.** |
| Year 4  | **Animals Including Humans –** This unit takes children through six lessons where they learn how to: **describe the simple functions of the basic parts of the digestive system in humans; identify the different types of teeth in humans and their simple functions**; andfinally,**construct and interpret a variety of food chains, identifying producers, predators and prey****States of Matter** This unit takes children through six lessons where they learn how to: **compare and group materials together, according to whether they are solids, liquids or gases; observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C);**and finally,**identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.** | **Living Things and their Habitats** This unit ‘Living things and their habitats’ takes children through six lessons where they learn how to: **recognise that living things can be grouped in a variety of ways; and explore**and**use classification keys to help group, identify and name a variety of living things in their local and wider environment.****Electricity** This unit takes children through six lessons where they learn how to: **identify common appliances that run on electricity; construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.**Children also learn how to:**identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery; recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit;**and finally,**recognise some common conductors and insulators, and associate metals with being good conductors.**  | **Living Things and their Habitats – Conservation**This unit takes children through six lessons where they learn how to **recognise that environments can change and that this can sometimes pose dangers to living things.****Sound** This unit takes children through six lessons where they learn how to: **identify how sounds are made, associating some of them with something vibrating; recognise that vibrations from sounds travel through a medium to the ear; find patterns between the pitch of a sound and features of the object that produced it; find patterns between the volume of a sound and the strength of the vibrations that produced it;**and finally,**recognise that sounds get fainter as the distance from the sound source increases.** |
| Year 5  | **Earth and Space** This unit gives learners the opportunity to star-gaze by learning more about the earth and space. Starting on earth and understanding our position in the solar system, before expanding out to the moon, the solar system and exploring the Big Bang theory, our unit on Earth and Space covers all the requirements of the National Curriculum programme of study. Opportunities within this unit include building a solar system model, taking part in games and role-plays and measuring gravitational force. **Forces** This unit takes children through six lessons where they learn how to: **explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object; identify the effects of air resistance, water resistance and friction, that act between moving surfaces;**and finally, they learn how to **recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.** | **Properties of Materials** This unit takes children through six lessons where they learn how to: **compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets; know that some materials will dissolve in liquid to form a solution, use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating;**and finally, they learn how to **give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.** **Changes of Material** This unit takes children through six lessons where they learn how to: **describe how to recover a substance from a solution; demonstrate that dissolving, mixing and changes of state are reversible changes;**and finally, they learn how to **explain that some changes result in the formation of new materials and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.** | **Animals Including Humans - The Human Life Cycle** This unit ‘Animals, including humans’ takes children through six lessons where they learn how to: **describe the changes as humans develop to old** **Studying Living Things and their Habitats** This unit pays homage to two of the best modern-day science communicators - Sir David Attenborough and Dame Jane Goodall. Through such inspiring explorers, we can understand far more about the animal kingdoms we have on Earth. In 'Studying Living Things', learners are encouraged to think further about life cycles, as well as different forms of reproduction in animals and plants. Opportunities arise in this unit for learners to develop their research skills, as well as plenty of chance to build representative models and continue to practice drawing diagrams and graphs.  |
| Year 6  | **Classifying Living Things and their Habitats** Building on previous 'Living Things...' units, this Year 6 National Curriculum course helps learners identify the kingdoms of life and to classify living things within those kingdoms. Learners will then look more closely at vertebrates, fungi and yeasts. Within this unit, there is opportunity to grow some mould and investigate what accelerates its growth. **Electricity** This unit takes children through six lessons where they learn how to: **associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit;**they learn how to **compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches;**and finally, they use r**ecognised symbols when representing imple circuit in a diagram.** | **Evolution and Inheritance** This unit looks at evolution and the theory of Charles Darwin, as well as exploring natural selection. We also focus on palaeontologist Mary Anning and what fossils can tell us about the past. We then look at modern genetics, giving learners the opportunity to consider the morality in genetic modification. From the history of evolution to modern-day scientific innovations, this unit ensures learners understand and challenge scientific theories and ideas.   **Light** This unit ‘Light’ takes children through six lessons where they learn how to: r**ecognise that light appears to travel in straight lines; use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye; explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes;**and finally, children learn how to **use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.**  | **Living Things and Their Habitats** Building on previous '*Living Things...*' units, this Year 6 National Curriculum course helps learners identify the kingdoms of life and to classify living things within those kingdoms.  Your learners will then look more closely at vertebrates, fungi, yeasts and soil habitats.  Within this unit, there is an opportunity for creating your own woodlice habitat, growing some mould, and a beginners guide to some scientific drawing - of some mushroom spores.**Looking After Our Environment** This unit ‘Looking after the Environment' takes children through six lessons and is designed to complement the DfE’s sustainability science curriculum this unit. To align with the National Curriculum this unit is delivered to further develop children's **working scientific skills**. Children explore: the core concepts – **'so what the climate is, how it changes, the difference between a man-made and natural environment and where different types of animals live**'.  |